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Notes on Diatoms.

We have received from Dr. Geo. H. Taylor, of Mobile, a very interesting gathering of marine diatoms from Tampa Bay, Florida. The following is a list of the species which it contains:

Actinoptychus splendens, Shadbolt.
A. undulatus, Ehr.
Amphiprora elegans, W. Sm.
Auliscus pruinosus, Bailey.
A. cœlatus, Bailey.
Biddulphia pulchella, Gray. Rare.
B. rhombus, W. Sm.
Campylodiscus cribrosus, W. Sm.
Eupodiscus Argus, Ehr.
E. radiatus, Bailey.
Melosira sulcata, Kutz. (=*Orthosira marina.*)
Navicula Lyra, Ehr.
N. permagna, Edwards.
Rhabdonema arcuatum, Kutz. Rare.
Stauroneis aspera, Kutz.
Surirella Febigerii, Lewis.
Triceratium favus, Ehr.
T. scitulum, Bright. (=*var. of T. favus.*)
T. spinosum, Bailey. Rare.
Tryblionella scutellum, W. Sm. (=*Nitzschia circumsuta.*)
Terpsinöe musica, Ehr.

Dr. Taylor's letter will doubtless interest many of our readers.

[C. H. K.]

Editor of BULLETIN:

I have read with interest an article on diatoms by Mr. C. H. Kain, which appeared in the February number of your journal. The article is valuable from the fact that Mr. Kain relates his experience in the actual field of investigation, and speaks only of what he has accomplished. Mr. Kain unfortunately cautions the avoidance of muds in the collection of diatoms. In this I do not agree with him, for, if we avoid the muds, we are cut off from some of the finest specimens that are easily obtainable by all, whether they reside near the coast or thousands of miles from it. I am now engaged in working up the muds of the North Carolina coast. I must depend entirely upon others for the raw material. My plan of operation is to order the muds from the deep water where vessels are anchored. When this is received and examined, I order again from different locations where oysters abound, for it is a well-known fact that the oyster muds always contain many beautiful forms. On the Gulf coast there are three classes of muds—blue, black and gray. I always select the blue muds. In Tampa Bay, Florida, the bottom is composed of three distinct classes of marine and vegetable matter. There is a white marl, a black mud and a blue mud. As a rule it is only the blue mud that is productive. I have often read with surprise the remarks of eminent diatomists on the avoidance of marine muds. I am now offering a cleaning from Tampa Bay, which I challenge the world to duplicate from the same material. Those who receive it will find it to contain beautiful specimens of *Auliscus pruinosus*, *Auliscus cœlatus*, *Triceratium favus*, *Nitzschia circumsuta*, *Eupodiscus radiatus*, *Eupodiscus Argus*, *Orthosira marina*, *Amphiprora elegans*, *Terpsinöe musica* and *Surirella Febigerii*.

The mud from which these vigorous forms are obtained is one of the most difficult to clean, that is to eliminate the sand, of any on the Gulf coast. The result obtained, however, more than pays for the labor expended. In cleaning these muds I have used as much as two hundred and fifty gallons of water before I obtained enough material, in a cleaned state, to cover the bottom of a half-drachm phial. I have now on hand a specimen of this kind from Apalachicola Bay, which took three gallons of mud and the above named quantity of water to thoroughly wash before the application of acid. The great mistake generally made in cleaning marine muds is that not enough care is taken in the first washings with water. My method is to remove all sand possible before shaking is commenced, for the violent agitation of a mixture of sand and diatoms is very apt to break some of the most beautiful forms in the deposit. Another mistake made in cleaning diatoms is by placing too large a quantity of the raw material in the vessel for the first washing. Only as much should be placed in the bottle or jar as will settle in ten minutes, and this should be repeatedly washed until the water will settle clear in a few minutes. The jar should not be shaken, but rotated, and the sand removed after each settling. If this is followed out faithfully there will be very little trouble encountered when the time comes to apply the acid.

I am offering to send cleaned material from Tampa Bay to any who send me their address, and will allow them to place their own value upon it. I make this offer in order to assist me in procuring material from the Atlantic coast, which I am now about to work up. I shall send the result of this work to diatomists all over the country, through Messrs. Queen & Co., of Philadelphia, free to all who apply for it.

Respectfully yours,

GEO. H. TAYLOR.

A supposed new Genus of Anacardiaceæ from Bolivia.

By N. L. BRITTON.

SYCOCARPUS. Calyx four-toothed; corolla coriaceous, gamopetalous in the bud; stamens eight; anthers oblong, sessile near the summit of a campanulate disc; pistil one; ovary four-celled, pubescent; style short, also pubescent; stigma peltate, its flat top marked by four indistinct grooves; fruit shaped like a young fig, dry and crustaceous, indehiscent, imperfectly four celled, containing one or two erect seeds, laterally attached to an axillary placenta. Mature flowers not seen.

S. RUSBYI. Leaves imparripinnate, 5 to 7 dm. long by 3 to 4 dm. wide, broadly oblong in outline; leaflets opposite, of from five to ten pairs, short petioled, oblong, somewhat obtuse at each end, entire, 15 to 20 cm. long by 5 to 6 cm. wide, smooth on both sides when mature; racemes appearing in the axils of the leaves, once compound, loosely flowered, 25 to 30 cm. long by 5 to 10 cm. wide at the base; flowers nearly sessile; fruit brown, 12 to 18 mm. long when mature, pubescent when young, but soon becoming glabrous.

A tree of some 12 metres in height, broadly branching from near the base, reaching an extreme trunk diameter of nearly one metre, the ultimate branches erect; wood rather soft, covered with a thick ash-colored bark, which becomes rough only in age; leaves erect-clustered at the ends of the branches.

Collected in Bolivia by Dr. H. H. Rusby, May, 1886.